of buildings it might be accomplished with air that was warm as well as fresh, of which practical instances were in progress. Tubular chimneys of fire-brick, which had been in use in various places, with a much smaller bore, would "draw" better, and with a careful disposition of fire-brick over the fire-grates would give greater warmth with less fuel. He pointed to marks of damp on the stairs, opposite to the ornamental sandstone copings, as a defect incident to the use of so absorbent a material. The thickness of the walls diminished the damp or the expenditure of fuel to prevent it, from the use of so absorbent a material as the common brick. But by the use of a harder, or machine-made brick, and by the construction of hollow walls, warmth or dryness might be obtained with a less expenditure of fuel.

The size of the chimneys, Mr. Lang, the architect, pointed out, was due, with other errors, to ill-advised building regulations. The materials of construction, he said, were the best the district afforded.

Correspondence.

WORKS FOR PRACTICAL MEN.

SIR,—I am a practical working mechanic, a millwright and engineer, I have been in the habit of taking in mechanical works of course, for the purpose of gaining information; these books I have read over and over again, and now I am equally as forward as I should have been if I had never seen these books. I will take one work for instance, the "Engineers' and Machinists' Assistant," in the preface of which, it says, the work is intended for the humble artisan; and I will ask you, Sir, whether Algebra, Logarithms, and Euclid, are to be found in a factory of commonly educated men? Where is the utility of a man of the same class as myself going to the expense of taking in these works, when, comparatively speaking, they are useless to him? I am not the only individual who complains, there are some twenty or thirty in the same factory, who have been similarly disappointed; why not give the various calculations in plain figures, such as decimals, and without algebraic signs? I am sure they might be dispensed with, were it the wish of the author to instruct and enlighten the ideas of the working mechanic.

Works of this kind are not fit for factory perusal, for the man that comprehends them is a man of education, a man of great abilities; in fact, he must be equal to the authors in his acquirements of knowledge. Sir, I feel certain, that if there was a work brought out, more simplified, and with less abstruse language and algebra, it would be much more supported by the practical working men, than works of the present day are.

Hoping that you will grant the favour of inserting this humble letter in your columns, as by so doing you will oblige some forty or fifty others besides.—I am, Sir, &c.

Oct. 23rd, 1846. J. P. K.

SANATORY STATE OF BUCKINGHAM PALACE.

SIR,—In my last hurried letter I omitted to mention the additional argument against the sanatory state of Buckingham *Palace*, that during the late severe hail storm, the *basement* of both wings was under water; and to whatever cause this casualty may be sought to be attributed, the circumstance can only tend to sustain and strengthen my observations, as to the unfitness of the *palace* as a royal residence, independent of the nasty neighbourhood by which it is so closely invested. It is impossible to expect either good drainage or ventilation in a building so squatted down in the ground; and to attempt to mend so grievous an error is futile;—low and damp it is,—and low and damp it must remain,—there is no help for it now. Let me beg of your readers to refer to the last number but one of THE BUILDER, and look at the view of "The University Galleries and Taylor Institute," lately erected at Oxford, and observe how differently, but how judiciously, Professor Cockerell has elevated the basement of that building, giving it an improved character by elevation, as well as affording increased room. I may here remark, too, that it seems a sound and happy view, to unite two or more institutions into one fine building, which, taken singly, could not afford the same scope to the effort and skill of the architect.—I am, Sir, &c

PHILO-MENICUS.

IMPROVEMENT OF RAILWAYS.

SIR,—Allow me, through the medium of your columns, to make a suggestion with regard to railways, which I think would do much towards the prevention of accidents.

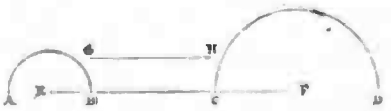
What I propose is, that in the construction of all trunk lines *three* sets of rails should be laid down instead of two, so that if any repairs were wanted on one of the lines, the traffic might still go on on the other two lines, and the necessity of crowding all the traffic on one line would thus be obviated.—I am, Sir, &c.,

London. ONE OF THE PUBLIC.

A PROBLEM FOR SOLUTION.

GIVEN the semi-circles AB, CD, connected by the line of centres, EF, and the parallel line GH, to find the centre of a circle that shall be tangential to the given semi-circles, and to the line GH.

J. M.



Miscellanea.

THE PARK IMPROVEMENTS.—A correspondent (Mr. H. Whitaker), in giving expression to his approval of the suggestions in our last impression on this subject, remarks, that there is something more wanted on the path leading from Oxford street gate, namely, "a viaduct over, or an arch under, the road, with steps leading up the one and down through the other. It might be made a police-station, and a place for a respectable person to sell refreshments. Something handsome might be designed for it, and prove an ornament to the present ugly spot. The proposition is subject to many objections, but I am sure," he adds, "they might all be overcome. It is impossible to pass the place without feeling that such nuisances ought not to exist and be allowed to continue year after year, as if there were neither money nor brains in the country to cure them." We fear our correspondent has overlooked the fact, that this is but one out of many nuisances of an exactly similar order, affecting the metropolitan streets and roads, all equally demanding obviation, and all equally expensive and difficult in obviation. A precedent such as this might lead to a demand for viaducts with steps, for ascent and descent of pavement passengers, across *every* great thoroughfare; but where is the money to come from for desirable improvements such as these?

THE BUILDER'S FRIEND.*—Under this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the relative prices plank, deals, battens, and timber, bear to each other, from 20*l.* to 45*l.* the hundred, so that on looking at it, any person about to build will easily discover which is cheapest for him to buy. For instance—

If 120 12 ft. 3 in. 11 in. plank cost	£20	0	0
120 12 „ 3 „ 9 „ would be..	16	7	3
120 12 „ 3 „ 7 „ „ ..	12	14	6
120 12 „ 2½ „ 7 „ „ ..	10	12	1
This is equal to per load.....	3	0	7

The information is given in a concise form, so as to fit the pocket-book.

TRUTH IN ARCHITECTURE.—A correspondent, commenting on a recent letter in our pages on this subject, the writer of which asserts that if he were strictly to carry out the principle upheld by the opponents to his views, it would compel him to demolish his viands in a very raw and pristine state, says:—"Nothing of the sort; it permits, and indeed urges him to dress, garnish, and serve up his beef in the most refined and tasteful manner. What the principle does protest against, is the impropriety of his anointing it with pyroligneous acid, and then coolly attempting to pass it off as pickled salmon."

* Published at 9, York-street, Covent-garden.

SAXON TOWER OF TRINITY CHURCH COLCHESTER.—A fortnight ago a deputation from the British Archæological Association visited Colchester, and after examining the whole of the antiquities there, held a meeting for a discussion upon them. The buildings were mentioned *seriatim*, and amongst them, the tower of Trinity Church. This, Mr. White observed, was one of the most beautiful things they had seen in the town; and if Colchester, in its guard house, could boast one of the finest pieces of Roman work, it could also lay claim to one of the most perfect Saxon Towers in England. The semi-circular doors resembled some of the windows in Deerhurst Church, as also Aveley Church, in this county. In Trinity Church it was peculiarly marked; it was built entirely of brick, and in order to counteract the very bad construction of bricks laid to form an angle, the builders had evidently formed it of two segments of a very large circle. The little arch, at the east end, was very interesting, because it proved that not only in the Norman, but also in the Saxon times, was the tower arch thrown into the church; for there could be no doubt that the arch he had mentioned looked into the original building. The windows on the outside looked like circular openings, but in the interior they were not so, they had circular heads with two tiles on each side at the springing of the arch. This tower was one of the few specimens of Saxon architecture remaining in this part of the country; and to his mind it was one of the most interesting objects in Colchester. He hoped that neither in the re-hanging of bells, nor for any purpose, it would be interfered with. He should very much like to see the filling up of some of the windows removed, in order to see whether the cills were flat, as was the common Norman style, or considerably slanted, as were all Saxon windows hitherto discovered. At the meeting, an investigation was made of the peculiar masonry of tiles of which most of the ancient buildings in that town is composed. That of the chapel near the castle of Dover was referred to as being analogous. It was shewn, that although the tiles in form and colour resemble Roman, yet there is a vast difference in the fabric and composition, as well as in the mortar. It was considered that tiles made after the Roman model, were made in Essex for centuries after the Romans left Britain; and the county is remarkable for its early churches built of tiles and bricks.

STRENGTH OF TUBULAR OR IRON BRIDGES.—Mr. W. Fairbairn's experiments having, in a manner, established the general fact that hollow beams of wrought-iron are about three times stronger than solid beams of the same form (and quantity of material surely), Mr. H. Hodgkinson has been further engaged, according to the *Mechanic's Magazine*, in ascertaining whether hollow beams of an oblong, square, or cylindrical form be strongest. From the results, shewn in the following table, it will be seen that the cylindrical are, as might have been, and was, in fact, anticipated, the strongest of all, and the square next in degree.

Weight of Tube.	External Diameter of Tube.	Weight of Greatest Resistance.
CYLINDRICAL TUBE.		
lb. oz.	Inches.	lb.
47 10	2·34	31,878
45 15	2·99	37,356
59 0	4·03	47,212
64 4	4·06	49,900
RECTANGULAR TUBE.		
43 14½	4·1×1·1	19,646
65 8	8·15×4·1	33,289
82 0	8·1×4·1	43,673
91 1	8·0×8·0	27,515

The rectangular tubes were all of plates, 1-16th of an inch thick, and all simple rectangles, except the last but one, which had a partition into two divisions.

MR. TERNOUTH, THE SCULPTOR.—Mr. Ternouth informs us that the report of his death is untrue. The statement, which had previously appeared in several of the journals, was sent us by a correspondent in whom we had confidence. We are very glad to find it incorrect.

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